

SEP 01 2006

PATENT Appn. S/N 10/750,833
Response to June 1, 2006 Office Action
Atty. Docket No. 12523/6**REMARKS**

Claims 1-20 are pending upon entry the amendments. New claims 12-20 have been added. Support for claims 12-20 can be found at least in original claims 1-9 and paragraphs [0019] and [0022] of the specification.

No new matter is added in the amendments provided herein.

Claim Rejections – 35 U.S.C. 112, second Paragraph

Claims 1-11 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse.

The test for definiteness under 35 U.S.C. 112, second paragraph, is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” M.P.E.P. 2173.02. The Examiner contends that the specification does not provide sufficient support so as to render the claim language definite. Specifically, the Examiner contends that the specification provides examples of species that fall within the scope of the language but does not limit or define the claimed invention. Applicants point out that paragraphs [0029] – [0035] of the specification not only provide examples of species, but also enable one of ordinary skill in the art to interpret the metes and bounds of the claims.

Specifically, paragraph [0029] defines the copolymer having a multilayer structure as “an impact modifier usually used in (meth)acrylic resin.” One of ordinary skill in the art would be able to understand what copolymer is claimed in light of such definition. Furthermore, paragraphs [0030] – [0035] not only provide examples of copolymers with three and two-layer structures, but also discloses in detail what each layer is made of and the function of each layer. One of ordinary skill in the art would understand what a multilayer structure is in light of such description. As a result, one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

For at least the reasons stated above, withdrawal of the rejections is respectfully requested.

Claim Rejections – 35 U.S.C.103

Claims 1-11 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Akao (USP 6,013,723) or Wanat (USP 5,063,259) or Wanat in view of Akao. Applicants respectfully traverse.

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First, a *prima facie* case of obviousness had not been established. The Examiner concedes that Wanat does not disclose fatty acid metal salts, but contends that one of ordinary skill would find it obvious to use the fatty acid metal salts species as these functional ingredients given the art recognized function, and that it would be obvious to use the fatty acid metal salt lubricants of Akao where the lubricants is called for in Wanat. Office Action dated December 14, 2005, page 3. Applicants point out that Wanat discloses lubricants as one of the many optional ingredients, and does not provide any guidance as to which one of the optional ingredients to use, or what specific species within these optional ingredients should be used. See Wanat, col. 6, lines 59-64. Akao discloses many categories of lubricants, and does not provide any guidance as to which one should be chosen either. One of ordinary skill in the art would have to first select lubricants from the list of optional ingredients, and then choose the fatty acid metal salts among the many lubricants that are available (or disclosed by Akao), without any specific motivation to do so. Such picking and choosing is only available in hindsight, and cannot be used to establish a *prima facie* case of obviousness.

Furthermore, without acquiescence with the assertion by the Examiner that claims 1-11 are *prima facie* obvious over Wanat and/or Akao, Applicants request that the Patent Office considers the attached Rule 132 Declaration. The Rule 132 Declaration demonstrates that the claimed combination achieves unexpected results relative to the prior art combination.

The excellent effect of controlling heat degradation of the present invention can only be achieved by the combination of copolymer obtained by suspension polymerization and fatty acid salt. As disclosed in paragraphs [0003]-[0004] of the specification, when (meth)acrylic resin obtained by bulk polymerization is used to form the final product (pellets), because most of the ingredients added when forming the composition such as an impact modifier and a processing aid are in the form of a powder, the pellets and the powder separate when compounding, transporting and extrusion molding and mixing and dispersion of the constituent elements may become inhomogeneous. To solve the dispersion problem, the present invention takes suspension polymerization as the essential condition and improves the problem in molding of heat degradation due to the resin (copolymer) obtained by suspension polymerization. As shown in Example 3 in the Rule 132 Declaration, when suspension polymerization is used together with a fatty acid metallic salt, the b value, an indication of heat degradation, is improved to 20.4 compared to the result in Comparative Example 3, wherein the fatty acid metallic salt is not used (b = 29.0). Other lubricants, however, do not achieve the same result. For example, as demonstrated by Comparative Example 4 in the Rule 132 Declaration, when oxidized polyethylene was used instead of the fatty acid metallic salt, the b value is 31.4, which is

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worse than the result of Comparative Example 3, wherein no lubricant is used ($b = 29.0$). These results demonstrate that the present invention improves heat degradation by the specific combination of suspension polymerization and fatty acid metallic salt. Such a specific combination is not taught or suggested by the prior art.

Moreover, even assuming, *arguendo*, that Wanat can be modified to include lubricants, such a combination would not achieve the improved heat degradation effect as the present invention. The Examiner contends that Wanat states that the polymer can be formed by suspension polymerization. Applicants point out that col. 3, lines 36-38 of Wanat discloses that "the matrix polymer may be prepared by many methods, such as in emulsion, by suspension process, by solution process, or by bulk polymerization," with no specific motivation provided for suspension process. In fact, the specification directs one of ordinary skill to bulk polymerization. For example, col. 2, lines 11-12 states that "the matrix polymer is usually prepared by a bulk process in which few if any contaminants are present;" col. 3, lines 41-42 states that "preferred is a continuous bulk process." From these descriptions, one skilled in the art would hardly choose suspension polymerization, wherein one should be afraid of the contaminants to some extent. Instead, one skilled in the art would choose bulk polymerization. Comparative Example 5 in the Rule 132 Declaration shows that when a fatty acid metallic salt is added to the copolymer obtained by bulk polymerization (as disclosed by Wanat), the b value is 14.9, compared with the value of 7.9 in Comparative Example 6, wherein no additive is used. Comparative Example 7 shows that when oxidized polyethylene wax is used, the b value is 13.0. Therefore, the addition of lubricants has an adverse effect to heat degradation, when bulk polymerization is used.

For at least the reasons stated above, claims 1-11 are believed to be patentable over Wanat and/or Akao. Withdrawal of the rejections is therefore requested.

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CONCLUSION

The claims are believed to be allowable. An early and favorable action to that effect is respectfully requested.


The Examiner is invited to contact the undersigned to discuss any issue regarding this application.

The Office is authorized to charge any fees under 37 C.F.R. 1.16 or 1.17 or credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,

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